

ENERGY -- SLOVENIA

I. Statistical information -- Primary Energy Consumption

1998	Ktoe	%
Coal	1455	22
Other hard fuels	264	4
Crude oil	248	4
Liquid fuels	2168	33
Natural Gas	778	12
Hydro	297	5
Nuclear	1314	20
Renewable	2	
TOTAL	6526	100

II. Evaluation of Sector -- Electrical power Systems, Oil and Gas field machinery and Services and Renewable Energy Equipment

G) On a scale of 1 (low) to 5 (high), evaluate the priority given by the Slovenian government to energy development: 4

H) On a scale of 1 (low) to 5 (high), evaluate country's receptivity to U.S. products & services: 4

I) On a scale of 1 (heavy) to 5 (little), evaluate competition for U.S. exporters from local domestic suppliers: 3

J) On a scale of 1 (heavy) to 5 (little), evaluate competition for U.S. exporters from third-country suppliers: 1

K) On a scale of 1 (severe) to 5 (little), evaluate overall effect of trade barriers on U.S. exports of products or services: 4

III. Narrative Information

Electric Power Generation and Transmission Equipment (ELP)

1998	Capacity MW	Production GWh
Thermal	1013	4362
Hydro	782	3216

Nuclear	664	4809
Total	2459	12387

In 1998, Slovenia had a total production capacity of 2,459 MW. The total net domestic production was 12,387 GW of which 35% was generated by coal, 26% by water and 39% by nuclear. Slovenia imported 712 GW and exported 2630 GW of electricity. Total domestic consumption was 11,049 GW in 1998.

The electric power industry in Slovenia has a disaggregated structure with a number of financially separate enterprises in generation, distribution and transmission, as well as in related activities such as research. Despite the disaggregated organizational structure, long term planning and most operational decision making is made by the government. Transmission and dispatching is operated by the state-owned company ELES (Elektro Slovenia). ELES is also responsible for short-term technical and economic planning, system optimization, electricity trade and technical relations with UCPTE (Western European Electricity System). ELES supplies 5 large industrial consumers at 110 kV through direct sales. Electricity is otherwise marketed through 5 regional distribution companies, each organized into a number of sub-regions.

There are eight generating companies, each with one main power station, or in the case of hydro-power operating a chain of plants on a single river system. Electricity generated by auto producers in industry and hydro-power plants owned by private companies and electricity distributors generate around 3% of total electricity supply. Power is supplied mainly from coal (lignite), nuclear and hydro-power plants in fairly balanced proportions. Gas and oil-fired plants each provide less than 2,6% of total production. Slovenia also owns part of a coal-fired plant in Bosnia-Herzegovina (with a production capacity of 93 MW). The plant is currently out of operation and its future contribution to the Slovene electricity system is uncertain.

Slovenia also has a nuclear power plant located near the border with Croatia. The plant is owned and operated by Nuklearna Elektrarna Krsko (NEK) and is currently still under equal Slovene and Croatian ownership. The plant is equipped with a two-loop Westinghouse pressurized water reactor, with one steam turbine and two steam generators. The planned annual electric power production amounts to 4,400 GWh which represents over 30% of the total electricity production in Slovenia.

The Slovene electricity system is connected to Austria, Italy and Croatia with 220 and 440 kV transmission lines. Electricity is traded with Austria, Italy, Greece and Switzerland on long-term contracts, based on barter agreements.

The energy industry is almost entirely publicly-owned. In the petroleum and gas industries ownership is distributed predominantly among the state, other publicly-owned companies, state funds or employees. Electric companies, including production and distribution facilities, are all state owned. It is clear that while

distribution companies will be privatized, transmission and nuclear power plant will remain governmentally owned .

Summary of Main Provisions of the recently passed new Energy Law:

- a.) Definition of energy supply as a public service:** Production and transmission of electricity and the transport of natural gas are defined as obligatory public services at state level. Distribution of electricity will also be carried out as a public service, but could be organized at the local level.
- b.) Performance of public services:** To carry out public service functions, the draft law foresees public enterprises or concessionaires, allowing for private ownership. Transmission of electricity should be undertaken by a public enterprise, whereas both company structures are feasible for distribution and production. Natural gas transportation should be undertaken by one concessionaire.
- c.) Third party access:** Limited third party access on a negotiated basis is expected for electricity as well as for natural gas.
- d.) Prices and finance:** Separation of accounts for production, transmission and distribution. Changes in prices should be reviewed by an expert committee. The draft also allows for subsidized prices to certain consumer groups.

Oil & Gas Industry and Equipment Market

The oil sector is dominated by three companies responsible for small scale production, refining, trade and distribution: Petrol Trgovina, Istrabenz and Nafta Lendava. Though most of these companies and their affiliates are owned by the state and employees, some have entered into joint-ventures with foreign investors. Oil exploration and production is undertaken by Nafta Lendava through a concession contract. Domestic production plays only a very limited role in the country's energy supply. Slovenia produces small amounts of oil and gas from one field with small proven reserves. (Nafta Lendava produces about 2,000 toe annually of light, low sulfur crude oil which is 0,5% of Slovenia's annual oil supplies). There are no laws regulating oil exploration and production and no taxes on oil production. Proven oil reserves are estimated at 185,000 toe.

The Adria pipeline is the main route for oil imports, linking the Croatian import terminal at Krk Island to the Sisak refinery, the Virje oil fields in Croatia. A branch line runs from Croatia to the Federal Republic of Yugoslavia and to Slovenia. From Virje, a 72 km pipeline to the Lendava refinery on the Slovene oil field was built in 1980, with an initial capacity of 2 million tons/year. There are no other pipelines in Slovenia. The Lendava refinery imported Middle East crudes until September 1991 when the Adria pipeline was cut off in Croatia. The flow was then reversed to import crude from Russia through Druzbha pipeline connection in Hungary. The refinery also imported high quality crude and condensates from fields in Croatia. At the end of 1994, the transit contract with was

renegotiated. The refinery continues to take light Croatian crude to balance the lower quality of the Russian crude supplied via Hungary.

Lendava is a 600,000 tons/year topping refinery with no upgrading facilities or desulphurisation units. The refinery has not been modernized, though a waste water treatment plant was built recently. The refinery produces 400,000 to 500,000 tons of oil products annually.

The structure of Slovenia's oil use is similar to that of EU countries. Slovenia's total oil supply amounted to 3000 metric tons in 1998 and final consumption was 2600 metric tons. The transport sector-almost entirely road traffic- accounted for more than 65% of final consumption. Industry consumed 9,7% and the residential/commercial sector accounted for 27,2% of final oil consumption.

Oil reserves held in Slovenia are commercial rather than for strategic purposes; however, there are some stocks for military use. Commercial stocks amount to one month of normal gasoline and diesel consumption. There are no emergency stocks and there is no legislation on the security of oil supplies.

There are no price regulations on crude oil imports. Imported oil products need to comply with product quality regulations. These are equivalent to regulations in EU countries. A new law on import tariff taxes entered into force in January 1996, taking into account the recent adherence of Slovenia to GATT. There are no taxes on imported crude oil.

The introduction of natural gas started in 1975 when the government decided to build a high pressure gas network and import gas as a substitute for oil. The total length of the current gas grid is 920 km. Geoplin is the company responsible for natural gas trade and transit; and there are local distribution companies. Geoplin maintains an import and transit monopoly. However, the government is considering introducing limited third party access for large consumers and distributors. The Slovene gas network has three connections with foreign grids: the oldest with Austria in the northeast, and the newest with Italy to the west. It receives gas from storage facilities via a link with Croatia. Slovenia transports Russian gas to Croatia. There are no compressor stations in Slovenia. The network was designed to supply 1,300 million Sm^3 /year of gas.

Natural gas was first imported in 1978 from the former USSR through Slovakia and Austria under five year contracts. To diversify its gas supply, Geoplin signed a long-term contract with Algeria in 1988 for 350 million Sm^3 /year of gas through 2007. The delivery route for this gas is via Tunisia, the under-sea Transmed pipeline, and Italy. Geoplin now aims to have a supply of 60% Russian gas and 40% Algerian gas. This coincided with the first deliveries of gas from Algeria, and because of the resulting oversupply of gas, Geoplin decided to re-negotiate the quantity of gas supplied by Russia and Algeria. Gazprom and Geoplin agreed on yearly contracts in 1992 and 1993. In 1994, they signed a long term contract (up to 2005 with a possible extension to 2010) for the supply of 830 million Sm^3 /year.

Slovenia has not yet experienced any supply disruptions. However, it does not have any storage facilities on its own territory. Slovenia leases gas storage facilities in Austria and in Croatia, but total capacity is less than 40 days of consumption. Geoplin distributes gas to about 170 large industrial customers and 12 distribution companies. Geoplin also directly supplies district heating companies. The number of local gas distributors has increased in recent years. Eleven are public companies and there is one privately-owned operating under a concession contract. Import prices are negotiated by Geoplin with suppliers and transporters. There are no import taxes on gas.

Renewable Energy Equipment

The Government sees renewable energy as one of the most important source of primary energy in the longer term. Though the main contribution will continue to come from hydro-power and wood, the Government expects that biomass, solar energy and geothermal energy as well as waste incineration will gain market shares.

Hydro-power represented 4,7% of total Slovenia's primary energy supply in 1996, more than twice the average share of hydro energy in OECD-Europe. Most of the hydro power is produced in large scale plants, exploiting the country's main river systems. Renovation of most of the hydro-power stations is planned, which will result in increased capacity and efficiency of operation and production. The economic potential of small hydro-power plants is limited to about 1 TWh with a total capacity of 160 MW at approximately 600 sites. There are 320 small private hydro power plants currently in operation supplying electricity to the national grid, as well as 60 units in public and 40 in industrial ownership. These small hydro-power plants have a total capacity of about 70 MW.

Assessing Slovenia's wind power potential is limited by a shortage of suitable meteorological data. Considering the country's topographic and climatic conditions, however Slovenia's wind power potential is possibly around 3 TWh/year.

The geographic location of Slovenia favors the use of solar energy. However, the absence of statistical data on radiation levels and the absence of an assessment of suitable locations, does not allow a comprehensive assessment of the technical feasibility and economic practicability. Over the past decade, approximately 80,000 m² of solar collectors for hot water supplies have been installed. Available information suggests an average production of solar collectors of around 350 kWh/m²/year, with a size varying from 2 to 6m² per household.

The amount of radiation which can be transferred into useful energy through passive use of solar heating depends to a large extent on building design. Over the last two decades, several buildings have been constructed with the aim of enhancing the use of passive solar energy, but their overall impact on energy demand has been limited.

The application of photovoltaics has so far been modest. An estimated 15 kW of photovoltaic systems are installed in Slovenia, mostly for electricity supplies in remote areas where prohibitive distribution costs for conventional electricity supply make photovoltaics economic. The government expects that the total installed capacity will increase to 500 kW by 2000.

Geothermal energy has been exploited since Roman times, but its recognition as an energy source is recent. There are about 30 natural thermal springs and a further 48 locations where low temperature thermal water sources can be developed. The economic potential is around 130 MWth, 80% of which is already exploited. At present, geothermal energy is not used for electricity production.

Waste incineration with energy recovery can be an alternative way to use the energy content of solid waste. Waste disposal policies and regulations are the most important factors defining the potential for waste incineration, particularly the balance between landfill disposal and incineration. Several projects are in preparation but presently there is no incineration of municipal waste and only limited experience special waste incineration.

Forests and other wooded areas cover 51% of Slovenia. In 1993 and 1994, approximately 940,000 tons of dry wood were used for energy supply, representing approximately 240 Ktoe. The wood processing industry operates 92 waste wood fired boilers, with a capacity of up to 50 MW each. The total capacity amounts to 350 MW, representing approximately 10% of the total capacity of heat boilers in Slovenia. In addition, there are eight central heating plants, with a total capacity of 60 MWth and 8,5 MWel. Most of these plants have exceeded their lifetime and do not meet new emission standards. To remain viable, new plants will have to be constructed and existing plants refurbished.

IV. Major Procurements on the Horizon (next 18-36 months)

The government's vision for the energy sector is outlined in "Strategy of Efficient Use and Supply of Slovenia" which was approved in 1995.

Increased hydro electric power generation is one of the strategic objectives of the government's energy policy. The capacity to generate an additional 1,5 TWh of electricity by 2010 is planned, but this requires that 70% of the potential sites for development are exploited. Further upgrading on the upper stations of the Sava river is planned together with new plants on the lower course. Five additional new plants are projected for the Sava river to be commissioned every 2 years from 1998 onwards. Feasibility studies are underway for small additional run-of-river and storage plants in several places and for exploitation of other renewable energy sources. These renovations would increase the capacity by 151 MW and together with new plants, 358 MW of hydro capacity will be added to the system by 2010.

Plans for conventional thermal power generation are based on maintaining production at existing plant locations and building facilities at new sites, primarily for combined heat and power generation. Investments will be required to improve pollution control to meet environmental standards, to increase rapid response and peaking capacity and for renovation of control systems at existing plants. Both scenarios foresee the construction of new oil-fired capacity. One 68 MW oil-fired plant at Brestanica should be commissioned before 2005. A second plant with a capacity of 143 MW is scheduled for completion at 2010.

For the transmission and distribution system, investment plans up to 2010 include the modernization of the national dispatching and local distribution control centers, renovation of the transmission grid, better control of reactive power in the system and the completion and renovation of the east-west 400 kV transmission lines with a connection to Hungary and a 400 kV substation.

Realization of all these projects depends on implementation of the Government's goal to increase electricity tariffs to levels that cover costs. Lack of financial resources has postponed these priority investment projects for a number of years.

In the medium-term there is no overcapacity of gas transport infrastructure. However Geoplin plans some investments including the expansion of the gas pipeline network. Other investments contemplated by Geoplin include LNG projects and an underground gas storage facility. Investments in the distribution sector focus on expansion of the existing network.

V. Country's Methods of Procurement

The procedure applied by State Agencies and State controlled companies is prescribed and published in the Official Gazette. This procedure prescribes that such purchases should be done via public tender in the Official Gazette.

VI. Means of Financing Procurement

Most of the current energy projects are financed by local companies or with international credits in many cases guaranteed by official credit agencies. In some special circumstances, the government also provides financing with credits or guaranties. Another possibility for financing will probably also be direct foreign investment. Slovenia's position in the financial markets is strong, having received an A rating from Standards & Poor's, an A 3 rating from Moody's, and an A- rating from IBCE, all of which are higher than any other EU applicant.

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